DOCUMENT RESUME

ED 062 047 80 RC 006 076

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TITLE Evaluating the Effectiveness of Programs Designed to Improve the Education of Mexican-American Pupils.
INSTITUTION California State Dept. of Education, Sacramento.
SPONS AGENCY Office of Education (DHEW), Washington, D.C.
PUB DATE 71
NOTE 13p.; Second edition

EDRS PRICE MF-$0.65 HC-$3.29
DESCRIPTORS *Educational Programs; Evaluation Methods; Measurement Instruments; *Mexican Americans; *Program Effectiveness; *Program Evaluation; Research Design; *Research Methodology

ABSTRACT

An overview of factors that should be included in writing an evaluation of programs designed to improve the educational opportunities of Mexican American children is presented in this paper. The factors included are the statement of the problem with which the special program deals, presentation of the background information, and the steps needed for actual investigation. Investigation of the program is discussed in terms of such factors as the subjects, the educational plan, length of time, comparison groups, methods and instruments by which to gather data, means for analyzing data, procedures for controlling significant variables, and predictions or outcomes expected as stated in the hypotheses. This paper does not present "a rigorous nor a highly sophisticated approach to a research design;" however, "it does draw attention to the many variables that exist within any educational plan, and it does provide a simplified framework for examining such variables." (NQ)

ED 062047

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SECOND EDITION

Evaluating the Effectiveness of Programs Designed to Improve the Education of Mexican-American Pupils

RC006076

CALIFORNIA STATE DEPARTMENT OF EDUCATION
Wilson Riles – Superintendent of Public Instruction
Sacramento 1971

Evaluating the Effectiveness of Programs Designed to Improve the Education of Mexican-American Pupils

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This publication, which was funded under provisions of Title V of the Elementary and Secondary Education Act, was prepared for photo-offset production by the Bureau of Publications, California State Department of Education, and was published by the Department, 721 Capitol Mall, Sacramento, CA 95814.

1971

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PREFACE

This publication offers suggestions that may be useful in the development of plans for evaluating educational programs for Spanish-speaking pupils. It does not present a comprehensive description of research methods nor does it encompass *all* techniques and *all* approaches recommended by experienced investigators. However, it does draw attention to the many variables that exist within any educational plan, and it does provide a simplified framework for examining such variables.

Because of the demand for copies of this publication that exceed the first printing, we are pleased to reissue it in this second edition.

THOMAS A. SHELLHAMMER
Deputy Superintendent for Programs

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Some Suggestions for Evaluating the Effectiveness of Programs Designed to Improve the Education of Mexican Americans

The educational needs of children from Spanish-speaking families have been discussed and debated by educators and other interested persons for several years. Recently, renewed concern and available funds have resulted in the establishment of various programs which have as a primary objective the improvement of educational opportunities for Spanish-speaking pupils. From this statement of common purpose, which appears to be a unifying theme of the many efforts, the programs have taken diverse directions, depending upon each program planner's definition of improvement. For some schools, improved opportunity has been equated with increased emphasis on the learning of English; for other schools, improved opportunity has been sought through an additional exposure to the dominant Anglo culture; for still others, improved opportunity has been tied to a schedule of activities that should enhance self-worth; for a few, improved opportunity has been seen as a concentrated program of remedial reading. Some plans have elements of all these curricular adjustments. There are probably as many definitions of "improvement of educational opportunities for Spanish-speaking children" as there are people who have anxieties about the progression of these pupils through a school system, which has been described at times as alien to them and to their families.

In the face of so much diversity among philosophies, it is difficult for designers of programs to reach agreement. However, perhaps it is not necessary that there be agreement among them, for as ideas are exchanged, positions are defended, and viewpoints are shared, better school practices for teaching Spanish-speaking pupils may be developed. However, one requirement appears to be an essential ingredient of all plans and the one referential point upon which all planners can agree: the need for a careful appraisal of the effectiveness of programs designed to improve the educational opportunities of these children and young adults. Such programs should have a precise statement of the program's educational purposes; a detailed description of the plan of action, including personnel, materials, procedures, time allotments, and other significant aspects of the proposed treatment; a complete listing of the data gathering techniques and instruments; a suggested outline of the methods of data analysis; and a careful reminder of any limitations that can be expected in an investigation of so many complex variables.

On the basis of such evidence as has been gathered and those inferences as have been made, some conclusions may be drawn regarding the extent to which the stated objectives of any program have been achieved. For the children, the question is not merely one of improved educational opportunity, rather it is one of improved educational performance. Continuing appraisal is needed to identify those opportunities which do result in better pupil performance and those which fail to bring about the desired improvement. Empirical investigations may help estimate the worth of present efforts and may suggest the direction of future plans. Some recommendations for the study of program effectiveness are offered in this publication.

Statement of the Problem

A statement of the problem should include the reasons for the proposed development of the special program. Essentially, the problem definition not only provides a rationale but also gives a description of the needs as identified. The meeting of these specified needs then becomes a basis for the program and its operational objectives. One such problem as related to the concern for some groups of Mexican-American pupils may be stated as follows:

Children whose native language is Spanish and whose cultural backgrounds are different from the traditional school culture upon which the curriculum is based may be expected to experience difficulty in meeting the demands of the school world. Among the possible causes of failure are these: (1) a lack of experiences out of which concepts may grow; (2) an inadequate command of the English language, which is the language of the instructional program; (3) a lowered self-confidence resulting from repeated frustration and failure; (4) an unrealistic curriculum which

imposes reading and writing requirements in English before skills in listening comprehension and in speaking fluency have been accomplished.

In view of these factors, which are generally descriptive of the school problems of the Spanish-speaking child from a low-income family, it seems reasonable to design a program of instruction that would attempt to deal with these failure-producing conditions and to assess the effectiveness of such efforts to improve the educational opportunities of the Spanish-speaking children in the schools.

Other statements to describe or to delimit any given problem may include conditions that arise from local needs and specific concerns as existing within a particular school. The problem elements as specified then may lead to the next step which requires the sifting of any applicable information currently available as a result of other investigations of similar problems. A review of the past history provides valuable background for thinking about alternative solutions to the present problem.

Related Research

The background of information generally consists of a brief review of the related research that has already taken place and may express the findings or conclusions of others who have studied the same area. As the relevant literature is reviewed and as the data given or the theories advanced are examined, a reasonable theoretical framework can be constructed to support the proposed management of the educational problem. This framework then forms the basis upon which the hypotheses of the investigation can be made.

Literature Review

To cover the background information needed for an exploration of the several aspects of the problem previously cited, a review of the literature would probably include a survey of definitions, findings, and conclusions pertaining to the following: (1) concept formation and acquisition; (2) theories of bilingualism and its effect upon cognitive development; (3) theories of self-concept and the influences of frustration or failure upon self-worth; (4) the second-language learning theories, particularly learning English by native speakers of Spanish. Each of these four major variables could probably be explored in detail through an examination of articles in professional journals and books in which any previous applicable research has been reported.

A review of the literature is generally a time-consuming task and one that demands great patience and care. The extracted information, however, may provide additional insights and greater understanding of the stated problem as well as increased awareness of alternative solutions which may be tested. For these reasons, this searching of any available writings on the subject is likely to be one of the most valuable aspects of any study.

Presentation of Background Information

A few examples may illustrate a way of presenting the background information:

Concepts. Jerome Bruner and others in their volume, *A Study of Thinking*, point out that the basis for all thinking and cognition is concept formation and attainment.[1] Gage has suggested that there are at least three different ways in which new concepts may be formed and that these three ways may not be mutually exclusive. He describes these ways as: (1) the perceiving of common characteristics; (2) the combining of concepts already known; and (3) the inferring of underlying states or constructs as a means of forming concepts that are not directly observable.[2]

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[1]Jerome S. Bruner, Jacqueline Goodnow, and G. A. Austin. *A study of Thinking*. New York: John Wiley & Sons, Inc., 1956.

[2]N. L. Gage. *Handbook of Research on Teaching*. Chicago: Rand McNally & Co., 1963.

Bilingualism. Children who live in two cultures with languages that are different can be expected to develop some degree of bilingualism. Weinreich has said that bilingualism may be defined in several ways.[3] One theory of bilingualism is advanced by Ervin and Osgood, who suggest that the kind of bilingual system acquired depends upon the situation in which the language has been learned. If two languages are learned in a *single* situation or context and the native language is used to mediate meaning, then a compound system results. If the two languages are learned in *two different* situations, a coordinate system develops.[4]

Self-concept. Loevinger reports that there is a gradual increase in the tendency to see one's self faborably between the ages of eight and thirteen.[5] Sears and Sherman (1964) studied the development of self-esteem in school children and defined self-esteen as a favorable concept of self. They identified areas of experiences that appear to be the sources for children's perceptions of self-esteem.[6]

English as a second language. Ott has said that there are two main problems in second language learning. The first one exists in the relative difficulty of initial learning which may be decreased as the student becomes familiar with the language, and the second problem may be found in the learning of many vocabulary items and grammar rules without accomplishing speaking fluency.[7]

Documentation of References

It is essential that summarized information be carefully documented for author, title, publisher, and publication date so that anyone who wishes to consult the original writing may find the source from which the summaries have been made.

The Investigation

The study should identify (1) the pupils who are to be the subjects of the investigation; (2) the educational plan that is to be applied; (3) the period of time that the experiment will take; (4) the comparison groups that may be participating in the study; (5) the methods and instruments by which the data will be gathered; (6) the means by which the data will be analyzed; (7) the procedures by which the significant variables will be controlled; and (8) the predictions or outcomes expected as stated in the hypothesis.

Subjects to Be Studied

The pupils whose school problem is under investigation should be described in careful detail. The description should include the total number of pupils, the number of boys and girls, their chronological ages, the grade placements, their language backgrounds in both Spanish and English, their socioeconomic status, and any other relevant data. Such matters as rural or urban living, occupation of the father, educational level of the mother, place in the birth order, rate of pupil transfer, and such information as seems necessary to provide a clear picture of the attributes of the pupils should be provided. For example, one description of the subjects might be the following:

Nineteen pupils in the Mary Covillaud School, Marysville, California, will be the subjects of this investigation. They are children for whom Spanish is a first language and for whom English is a second one. The group is composed

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[3]Uriel Weinreich. *Languages in Contact*. New York: Humanities Press, Inc., 1953.

[4]Susan Ervin and C. E. Osgood. Cited in Gage, *op. cit.*, p. 1,085.

[5]Jane Loevinger. Cited in Paul H. Mussen, *Handbook of Research Methods in Child Development*. New York: John Wiley & Sons, Inc., 1960.

[6]Pauline S. Sears and Vivian S. Sherman. *In Pursuit of Self-Esteem*. Belmont, Calif.: Wadsworth Publishing Company, Inc., 1964.

[7]Elizabeth H. Ott. *A Study of Levels of Fluency and Proficiency in Oral English of Spanish-Speaking School Beginners*. Austin, Texas: The University of Texas, 1967.

of nine boys and ten girls whose grade placement ranges from kindergarten through grade three. There is a four-year age span from 6.0 to 10.1 years. All pupils have very limited or no command of English. They come from low-income homes in which Spanish is spoken by their parents. These boys and girls have had few opportunities for contact with the dominant culture of the community.

Procedure to Be Followed

The procedure may outline the proposed educational plan, its purposes, and how it is to be applied. The objectives should be specified in operational terms and should be derived from the statement of the problem and from the solutions suggested as a result of the review of the literature. In the case of a problem stated as a language-learning deficit in English, and with the thesis advanced that oral proficiency should precede reading and writing skill development, one aim of the program could be to increase the number of words and utterances in English that the pupils could understand and say. Other goals might also be specified as the use of complete sentences, the knowledge of correct word order, an awareness of varying patterns of intonation and stress, and a comprehension of certain structural variations in English.

A precise statement of expected outcomes provides direction for the important components of the educational plan: personnel, materials, techniques, methodologies, time schedules, supportive services, school plant, and other curricular matters. Those features of the plan which represent a departure from the usual school management of these pupils should be pointed out and fully explained. The addition of different courses, new people and their functions, health services, increased time allotments for special subject matter, inservice training of teachers, parent education, special organization of classes, and any other facet of school or community support that is being provided for the improvement of educational opportunities should be described.

Special effort must be made to differentiate from among the many strands of the curriculum those provisions which would have been made as part of an ordinary program and those arrangements which represent changes specifically applied for the purposes stated. For instance, if it has been hypothesized that a program of bilingual instruction using both Spanish and English will result in improved achievement in arithmetic and increased fluency in spoken English, the description of the plan should state what is being done about teaching the pupils in arithmetic, what approach is being taken in the teaching of English, and by what criteria achievement in arithmetic and fluency in English are to be evaluated. An illustration follows:

The children will spend every morning in a special bilingual class. The teacher, a native speaker of English, has a good command of Spanish. She is assisted by a teacher aide, a native speaker of Spanish with an adequate command of English. The room will be attractively furnished and equipped with a variety of books, games, toys, art materials, manipulative devices, and records. Pictures, charts, and room decorations that contain writing will be written in Spanish. Concepts in arithmetic will be developed on a concrete level supported by use of the Spanish language to mediate meaning until such time as the pupils have built an arithmetic vocabulary in English. A daily program to develop and to extend the pupil's skills in Spanish will provide reading, writing, and spelling in Spanish. An oral program of English-as-a-second-language will be given. The scope, sequence, and pace of presentation will be carefully controlled and systematically reviewed to ensure sufficient repetition and practice which will lead to mastery.

For part of each day, the pupils will participate in other classroom activities of the English-speaking children. In music, art, and physical education classes where language is not a hindrance to meaning, the Spanish-speaking pupils will join the various groups according to their most appropriate age placement. They will also share in the total life of the school by having the same recess times for informal playground activities and by taking part in assemblies, schoolwide parties, and special programs arranged by community or school groups.

Growth in proficiency in English and achievement in arithmetic will be measured. A description of the measurement instruments will be provided in the section on data-gathering techniques.

Time Period to Be Used

The plan may be applied for any period of time desired. The usual length of time is the regular school year from September to June. If the number of pupils is large enough and if a high rate of pupil transfer does not occur, the time could be extended over several school years, possibly a two- or three-year period. Such a longitudinal study would require very careful recognition of all the variables stated as well as others that might result from the passage of time and changes in developmental states of the pupils. The information yielded could be rich in ideas for planning both short- and long-range goals. The time period may also include the schedule of testing, interviewing, or other assessment techniques so that the effects of the educational plan, in terms of adjustment and enrichment, may be assessed. The most common arrangement provides for an appraisal before the program is offered and one after it has been provided. These before and after assessments are usually done in the fall and in the spring of the school year.

Comparison Groups to Be Established

It is often suggested that groups for whom no special program is being provided be included in the study so that the results can be interpreted against a background of comparable variables. Subjects in comparison groups should be described in detail, and the criteria for selection should be clearly stated. Pupils chosen for comparison with the subjects mentioned earlier may be identified in the following manner:

> Nineteen pupils in another school in the district represent the same chronological age, sex, socioeconomic status, ethnic background, and language characteristics as those pupils identified as subjects of the investigation. No systematized attempt to provide special instruction in English or in arithmetic is being made. These pupils are in a regular program in which all the instruction is given in English. No Spanish is used in the classroom nor is the program in English organized as a second-language approach. Reading, writing, and spelling are taught in English for all children, with a grouping provision for "slower" pupils within the class.

The comparison group may be tested and interviewed at the same intervals and with the same instruments as used for the group in the special program. The school progress of both groups may then be compared and the differences analyzed.

Methods of Study to Be Employed

Data about both groups of children – those in the special program and those being used for comparison purposes – may be gathered by interviewing parents and using a variety of measuring instruments.

Interviews with parents. Home visits may be made by a native speaker of Spanish and by a public health nurse, who is a member of the health services staff in the school district, or by another school employee. To provide comparability of the information gained by these visits, a structured interview technique may be used. Each family may be asked to respond to questions concerning the following:

- *Parents*: (1) educational level of the parents; (2) country of their birth; (3) language(s) spoken at home; (4) occupation and employment status; (5) home ownership or rental; (6) health of the parents; and (7) any other general information

- *Children*: (1) developmental history; (2) school history (number attended, places, and so forth); (3) child's present health; (4) special needs (vision, hearing, speech); and (5) language(s) spoken by child

Other information obtained during the interview may be included if it is pertinent to the study.

Measuring instruments. Assessment of intellectual potential vocabulary level in Spanish and in English may be accomplished by the use of the following instruments:

1. *Escala de Inteligencia Wechsler para niños* is a translation and adaptation of the "Wechsler Intelligence Scale for Children" (WISC). The WISC consists of 12 subtests that attempt to determine areas of strength and weakness. Scores are reported for the verbal and nonverbal abilities as well as in full-scale score reported in *both scaled scores* and I.Q.

2. Directions may be given in Spanish for the *Peabody Picture Vocabulary*. The age range of the Peabody is from three through eighteen years. The pupil is required only to point at the response of his choice. Items are arranged in order of difficulty to permit a *basal* and a *ceiling* age. Buros reports moderate reliability and advises caution in using the norms. Correlations with WISC and Binet appear to be in the 70s and low 80s.

3. *Three Wishes* is a projective technique to attempt to draw from the pupils some information regarding their needs, motives, dreams, and desires. *"Si tuvieras tres deseos ¿cuáles, serían?"*

4. *The Madeline Thomas Completion Stories* is projective technique for children which uses a series of stories without endings. The stories may be adapted in Spanish and read to the pupil. An *oral* response from the child may be elicited. The content is that which may be of common concern to school children of any cultural group or social class. There are two levels of *The Madeline Thomas Completion Stories* for both elementary and high school pupils.

5. The children are asked to draw a person in the *Machover Draw-a-Person*. Directions may be given in Spanish, and a few questions about the drawing may be asked.

6. *The Bender-Gestalt Test for Young Children* is a perceptual and projective test for children between the ages of five and ten years. It consists of nine figures, which are presented one at a time. The pupils are asked to copy these designs on a blank piece of paper. Scoring and interpretation of the drawings will yield information on the visual-motor perceptual skills of the children and some clues to their personality traits. The regular *Bender-Gestalt Test* may be used with older pupils by using the regular scoring and administration techniques.

7. *The Gesell Maturation Index* is an index of school readiness. Children are given various developmental tasks and are assigned a maturation level on the basis of their success in managing the various tasks. This instrument is very useful in the appraisal of young children.

8. *The Linguistic Capacity Index* is a test based on a contrastive analysis of grammar and phonology in both English and Spanish. It is a group measure administered orally by the examiner. The pupil responds by placing a mark on a picture. The subtests include vocabulary, contrastive phonology, and contrastive grammar. It was designed to test the English language skills of pupils whose native language is Spanish and assumes some *understanding* of English. It does not test *oral* English.

Analysis of Data

The data gathered about both groups of children – those in the special program and those in the comparison group – may serve a descriptive purpose to identify the childrens' learning potentials, their strengths, and their needs. In addition to this information, the data may be analyzed to discover growth patterns in language and in school progress. Data for the two groups can be compared to determine the impact of the special program. Data for boys and girls should be

analyzed separately. Appropriate statistical measures may be applied to test the significance of the differences if any are indicated. Case studies may be written in detail for each child if the number of pupils is not too large and if the evaluator has enough time and assistance to complete the individual case studies.

Limitations of the Investigation

There may be several limitations in any investigation that suggest caution in applying the findings to other groups. First, if the number of subjects is small, a wide application of the findings cannot be assumed. In addition the teacher variable should be noted. If there is one teacher and one teacher aide involved in the instructional program that is being examined and if there are several teachers and several aides in the comparison group, the variables among teachers in training experiences, attitudes, and other important aspects of classroom management may not have been controlled. One must also consider the fact that the "Hawthorne Effect" may have influenced the performance of the special educational plan. If the investigation proposes to look carefully at pupils in the early primary grades, the generalizations drawn from such a study would not necessarily apply to children in other grades. Finally, there are some cultural biases in the measuring instruments that are not removed by simply translating English words into Spanish. The WISC, for example, has been standardized on a Puerto Rican population, and most of these children are of Mexican background. Vocabulary tests, regardless of language used to administer them, are likely to favor middle-class children whose experiences are generally wider than those of children who come from low-income families.

In spite of these many stated limitations, the data gathered and analyzed should provide valuable *descriptive* information and suggest several implications for the improvement of the educational opportunities for Spanish-speaking children. The data should also offer a few answers to this question: To what extent did the program really provide improved opportunities for Spanish-speaking pupils, and to what extent has the educational performance of these pupils been improved?

Summary

This Publication provides an overview of the many elements which should be included in an evaluation of a program designed to improve educational opportunities of Spanish-speaking children of Mexican-American heritage. It does not represent a rigorous nor a highly sophisticated approach to research design. The suggestions are offered merely as a way of appraising the many efforts that are presently being extended on behalf of these pupils. N. L. Gage's *Handbook of Research on Teaching* and Paul H. Mussen's *Handbook of Research Methods in Child Development* offer many research models and excellent advice on measurement and evaluation.

José Enrique Rodó, a great intellectual and spiritual voice of Latin America at the turn of the century, said, "A man who is carried away by the partial appearance of things, and whose point of view is in error, is heading straight for mediocrity."

The search for a more complete picture of the educational needs of Spanish-speaking children and for improved methods of meeting such needs must be continued. For, as Rodó has warned, the dangers implicit in a "partial appearance of things" are self-evident.

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